UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL PERMIT:
CLASS I COMMERCIAL HAZARDOUS

Permit Number: **MI-163-1W-C008**

Well Name: **Well #2-12**

Pursuant to the Safe Drinking Water Act and Underground Injection Control regulations of the United States Environmental Protection Agency (USEPA) codified at Title 40 of the Code of Federal Regulations (40 C.F.R.), Parts 124, 144, 146, 147, and 148,

Environmental Disposal Systems, Inc. of Birmingham, Michigan

hereinafter the permittee, is hereby authorized to operate an existing Class I hazardous waste injection well located in Michigan, Wayne County, T3S, R9E, Section 12, SE Quarter Section, subject to the conditions of this permit. The injection zone, or zone which will contain the hazardous constituents, for this well includes the Mount Simon, Eau Claire, Franconia-Dresbach, Trempealeau, Glenwood, and lower Black River Formations between the depths of 3,369 and 4,550 feet. Injection is permitted into the interval of the Mt. Simon, Eau Claire, and Franconia-Dresbach Formations between the depths of 3,937 and 4,550 feet upon the express condition that the permittee meets the restrictions set forth in this permit. The designated confining zone for this injection well includes the upper Black River, Trenton, and Utica Formations. Injection shall not commence until the operator has received written authorization from the Director of the Water Division of USEPA Region 5, to inject.

References to 40 C.F.R. are to all regulations that are in effect on the date that this permit becomes effective. The following attachments are incorporated into this permit: A, B, C, D, and E.

This permit shall become effective on _____, and shall remain in full force and effect during the life of the permit, unless: 1) the statutory provisions of Section 3004(f), (g) or (m) of the Resource Conservation and Recovery Act, 42 U.S.C. § 6924(f), (g) or (m), ban or otherwise condition the authorization in this permit; 2) the USEPA promulgates rules pursuant to these sections which withdraw or otherwise condition the authorization in this permit; or 3) this permit is otherwise revoked, terminated, modified or reissued pursuant to 40 C.F.R. §§ 144.39, 144.40, or 144.41. This permit and the authorization to inject shall expire at midnight, _____, unless terminated.

Signed and dated: _____

_____
Jo Lynn Traub
Director, Water Division

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PART I
GENERAL PERMIT COMPLIANCE

A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. Notwithstanding any other provisions of this permit, the permittee authorized by this permit shall not construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of injection, annulus or formation fluids into underground sources of drinking water (USDWs). The objective of this permit is to prevent the introduction of contaminants into an USDW if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 C.F.R. Part 141 or may otherwise adversely affect the health of persons. Any underground injection activity not specifically authorized in this permit is prohibited. Compliance with this permit during its term constitutes compliance, for purposes of enforcement, with Part C of the Safe Drinking Water Act (SDWA). Such compliance is not a defense to any action brought under Section 1431 of the SDWA, or any other common or statutory law other than Part C of the SDWA. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local laws or regulations. Nothing in this permit shall relieve the permittee of any duties under applicable regulations.

This permit does not relieve owners and operators of hazardous waste injection wells of their obligation to comply with any additional regulations or requirements under the Resource Conservation and Recovery Act (RCRA). This permit does not authorize any above ground generating, handling, storage, treatment or disposal facilities. Such activities must receive authorization under the regulations promulgated pursuant to Part C of RCRA, if required.

B. PERMIT ACTIONS

1. Modification, Revocation, Reissuance and Termination - The Director of the Water Division of Region 5 of the USEPA, (the Director), may, for cause upon her initiative or upon request from any interested person, including the permittee, modify, revoke and reissue, or terminate this permit in accordance with 40 C.F.R. §§ 124.5, 144.12, 144.39, and 144.40. Also, the permit is subject to minor modifications for cause as specified in 40 C.F.R. 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes,

or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition.

2. Transfer of Permits - This permit is not transferable to any person except in accordance with 40 C.F.R. §144.38.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected.

D. CONFIDENTIALITY

In accordance with 40 C.F.R. Part 2 and 40 C.F.R. §144.5, any information submitted to the USEPA pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, USEPA may make the information available to the public without further notice. If a claim is asserted, the validity of the claim will be assessed in accordance with the procedures in 40 C.F.R. Part 2, Public Information. Claims of confidentiality for the following information will be denied:

1. The name and address of the permittee; and

2. Information which deals with the existence, absence or level of contaminants in drinking water.

E. DUTIES AND REQUIREMENTS

1. Duty to Comply - The permittee shall comply with all applicable Underground Injection Control (UIC) Program regulations and conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued in accordance with 40 C.F.R. §144.34. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. Such noncompliance may also be grounds for enforcement action under RCRA.

2. Penalties for Violations of Permit Conditions - Any person who violates a permit requirement is subject to civil penalties and

other enforcement action under the SDWA and may be subject to such actions pursuant to the RCRA. Any person who willfully violates permit conditions may be subject to criminal prosecution.

3. Continuation of Expiring Permits

(a) Duty to Reapply - To continue an activity regulated by this permit after the expiration date of this permit, the permittee must submit a complete application for a new permit at least 180 calendar days before this permit expires.

(b) Permit Extensions - The conditions of an expired permit may continue in force in accordance with 5 U.S.C. §558(c) and 40 C.F.R. §144.37.

(c) Effect - Permits continued under 5 U.S.C. §558(c) and 40 C.F.R. §144.37 remain fully effective and enforceable.

(d) Enforcement - When the permittee is not in compliance with the conditions of the expiring or expired permit, the Director may choose to do any or all of the following:

(1) Initiate enforcement action based upon the permit which has been continued;

(2) Issue a notice of intent to deny the new permit. If the permit application is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operation without a permit;

(3) Issue a new permit under 40 C.F.R. Part 124 with appropriate conditions; or

(4) Take other actions authorized by the UIC regulations.

(e) State Continuation - A USEPA-issued permit does not continue in force beyond its expiration date under Federal law if at that time a State has primary enforcement responsibility under the SDWA. A State authorized to administer the UIC program may continue either USEPA- or State-issued permits until the effective date of the new permits, if State law allows. Otherwise, the facility or activity is operating without a permit from the time of expiration of the old permit to the effective date of the State-issued new permit. Furthermore, if the State does not continue the expired USEPA permit upon obtaining primary enforcement responsibility, the

permittee must obtain a new State permit or be authorized to inject by State rule and failure to do so will result in unauthorized injection.

4. Need to Halt or Reduce Activity Not a Defense - It shall not be a defense for the permittee in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate - The permittee shall take all timely and reasonable steps necessary to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

6. Proper Operation and Maintenance - The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

7. Duty to Provide Information - The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request within a time specified, copies of records required to be kept by this permit.

8. Inspection and Entry - The permittee shall allow the Director or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

   (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this permit;

   (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

   (c) Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or

operations regulated or required under this permit; and

(d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA, any substances or parameters at any facilities, equipment or operations regulated or required under this permit.

9. Records

(a) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit for a period of at least five years from the date of the sample, measurement or report.

(b) The permittee shall maintain records of all data required to complete the permit application form for this permit and any supplemental information submitted under 40 C.F.R. §144.27, and 144.31 for a period of at least five years from the date the application was signed.

(c) The permittee shall retain records concerning the nature and composition of all injected fluids until three years after the completion of plugging and abandonment.

(d) The retention periods specified in Part I(E)(9)(a) through (c) of this permit may be extended by request of the Director at any time. The permittee shall continue to retain records after the retention periods specified in Part I(E)(9)(a) through (c) of this permit or any requested extension thereof unless the permittee delivers the records to the Director or obtains written approval from the Director to discard the records.

(e) Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;

(2) The individual(s) who performed the sampling or measurements;

(3) A precise description of both sampling methodology and the handling of samples;

(4) The date(s) analyses were performed;

(5) The individual(s) who performed the analyses;

(6) The analytical techniques or methods used; and

(7) The results of such analyses.

10. Monitoring - Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The permittee shall use the methods described in Appendix I of 40 C.F.R. Part 261, or an equivalent method approved by the Director, to take representative samples. Monitoring results shall be reported at the intervals contained in Part II(D), Part III(A) and Part III(E) of this permit.

(a) Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in Tables IA, IB, and IC of 40 C.F.R. §136.3 or in Appendix III of 40 C.F.R. Part 261 or in certain circumstances by other methods that have been approved by the Director.

(b) Sampling and analysis shall comply with the specifications of the Waste Analysis Plan required in Part II(C)(3) of this permit.

11. Signatory Requirements - All reports required by the permit, and other information when so requested by the Director, shall be signed and certified in accordance with 40 C.F.R. §144.32.

12. Reporting Requirements

(a) Planned Changes - The permittee shall give written notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility.

(b) Anticipated Noncompliance - The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(c) Compliance Schedules - The permittee shall submit reports of compliance or noncompliance with, or any progress reports on, interim and final requirements in any compliance schedule of this permit no later than 30 calendar days following each schedule date.

(d) Twenty-four Hour Reporting

(1) The permittee shall report to the Director any permit noncompliance which may endanger health or the environment. See, for example Part I(H)(5) of this permit. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. Such reports shall include, but not be limited to, the following information:

(i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an USDW; or

(ii) Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDWs; or

(iii) Any failure to maintain mechanical integrity.

(2) A written submission shall also be provided within five working days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance.

(e) Other Noncompliance - The permittee shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted. The reports shall contain the information listed in Part I(E)(12)(d)(2) of this permit.

(f) Other Information - When the permittee becomes aware of its failure to submit any relevant facts in the permit application or that incorrect information was submitted in a permit application or in any report to the Director, the permittee shall submit such facts or corrected information within ten calendar days, unless a longer time period is approved by the Director.

(g) Report on Permit Review - Within 30 calendar days of receipt of this permit, the permittee shall certify to the Director that one of its officers has read and is personally familiar with all terms and conditions of this permit.

13. Hazardous Waste Treatment, Storage, and Disposal Facility Requirements - The permittee shall comply with the requirements for wells injecting hazardous waste listed at 40 C.F.R. §144.14.

F. CLOSURE

1. Closure Plan - A plan for closure of the well that includes assurance of financial responsibility as required in 40 C.F.R. 144.52(a)(7) and includes the information, relating to plugging and abandonment required under 40 C.F.R. 146.71(a)(4), is at Part III(B) of this permit. The implementation of the Closure Plan is a condition of this permit; however, the permittee must receive the approval of the Director to proceed before implementing this plan. The obligation to implement the Closure Plan survives the termination of this permit or the cessation of injection activities.

2. Plugging and Abandonment - The permittee must receive the approval of the Director before plugging the well and shall plug and abandon the well consistent with 40 C.F.R. §146.71, as provided in the Closure Plan contained in Part III(B) of this permit. Within 60 calendar days after plugging the well, the permittee shall submit a Closure Report to the Director. The report shall be certified as accurate by the permittee and by the person who performed the plugging operation (if other than the permittee), and shall consist of either:

   (a) A statement that the well was plugged in accordance with the Closure Plan previously approved by the Director; or

   (b) If the actual closure differed from the approved plan, a statement defining the actual closure and explaining why the Director should approve such deviation. If the Director determines that a deviation from a previously approved plan may endanger USDWs, the permittee shall replug the well as required by the Director.

3. Revision of Closure Plan - If the permittee finds it necessary to change the Closure Plan, it shall submit a revised plan to the Director for approval with the next monthly report.

4. Notice of Intent to Close - The permittee shall notify the Director at least 60 calendar days before closure of the well, unless a shorter notice period is approved by the Director. The permittee shall submit any proposed significant revision to the method of closure reflected in the Closure Plan for approval by the Director

at least 60 calender days before closure, unless a shorter period of time is approved by the Director.

5. Temporary Disuse - If the permittee wishes to cease injection for longer than 24 months, it may keep the well open only if it:

   (a) Has received authorization from the Director; and

   (b) Has described actions or procedures, satisfactory to the Director, that it will take to ensure that the well will not endanger USDWs during this period. These actions or procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Director.

6. Standards for Well Closure - Prior to closing the well, the permittee shall:

   (a) Observe and record the pressure decay for a time specified by the Director and report this information to the Director;

   (b) Conduct mechanical integrity tests as requested by the Director to ensure integrity of casing and cement left in the ground after closure. Required testing methods may include any or all of those listed in 40 C.F.R. §146.71(d)(2); and

   (c) Flush the well with a buffer fluid.

G. POST-CLOSURE CARE

The permittee shall comply with the requirements for post-closure care and financial responsibility for post-closure care at 40 C.F.R. §§ 146.72 and 146.73.

1. Post-Closure Plan - The permittee shall comply with the approved plan for post-closure maintenance and monitoring. This plan includes the information required by 40 C.F.R. §146.72(a) and demonstrates how each of the applicable requirements of 40 C.F.R. §146.72(b) will be met. The approved post-closure plan is part of the permit file for this permit and the permittee shall maintain and comply with this plan as if it were fully set forth in the permit. The obligation to implement the post-closure plan survives the termination of this permit or the cessation of injection activities.

2. Duration of Post-Closure Period - The post-closure care period shall continue at least until all of the requirements of the

approved post-closure plan and of 40 C.F.R. §146.72 have been met. Prior to the time that the post-closure care period is due to expire, the Director may extend the post-closure care period if she finds that the extended period is necessary to protect the health of persons or to protect a USDW.

3. Post-Closure Corrective Action - The permittee shall continue and complete any cleanup action required under 40 C.F.R. §146.64.

4. Post-Closure Groundwater Monitoring - The permittee shall continue to conduct any groundwater monitoring required under this permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the hydrostatic head of the lowermost USDW as identified in the permit file for this permit, or as defined by the Director. The permittee shall estimate the time for pressure in the injection zone to decay to this point and shall include this estimate in the Post-Closure Plan. The Director may extend the period of post-closure monitoring if she determines that it is necessary to protect the health of persons or to protect a USDW.

5. Survey Plat - The permittee shall submit a survey plat to the local zoning authority designated by the Director as required by 40 C.F.R. §146.72(b)(3) and submit a copy to the Director.

6. Notification to State and Local Authority - The permittee shall provide notification and information to State and local authorities as required by 40 C.F.R. §146.72(b)(4).

7. Retention of Records - The permittee shall retain, for a period of three years following well closure, the records specified by 40 C.F.R. §146.72(b)(5), and shall deliver those records to the Director at the end of the retention period.

8. Notice in Deed to Property - The permittee must record, in accordance with State law, a notation on the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity provide any potential purchaser of the property with the information listed in 40 C.F.R. §146.72(c).

9. Financial Responsibility for Post-Closure Care - The permittee shall submit an approved demonstration of financial responsibility for post-closure care, as required in 40 C.F.R. §146.73, to the Director prior to the commencement of injection. The obligation to maintain financial responsibility for post-closure care survives the termination of this permit or the cessation of injection.

H. MECHANICAL INTEGRITY

1. Standards - The injection well must have and maintain mechanical integrity consistent with 40 C.F.R. §146.8(a)(1) and (2). Mechanical integrity demonstrations must be witnessed by an authorized representative of the Director to satisfy the requirements of 40 C.F.R. §146.8.

2. Periodic Mechanical Integrity Testing - The permittee shall conduct the mechanical integrity testing as follows:

   (a) Long string casing, injection tubing and annular seal shall be tested by means of an approved pressure test in accordance with 40 C.F.R. 146.8(a)(1) at least once every twelfth month beginning with the date of the last approved demonstration and in the following circumstances: 1) whenever there has been a well workover in which tubing is removed from the well; 2) the packer is reset; or 3) when loss of mechanical integrity becomes suspected during operation. The pressure test shall be performed at 100 psig over the maximum injection pressure set in Part III (A) or 500 psig, whichever is greater;

   (b) The bottom-hole cement shall be tested by means of an approved radioactive tracer survey at least once every twelfth month beginning with the date of the last approved demonstration;

   (c) An approved temperature, noise, oxygen activation, or other approved log shall be run at least once every 60 months, beginning with the date of the last approved demonstration to determine the absence of upward fluid migration. The Director may require such tests whenever the well is worked over. The permittee must submit logging procedures to the Director for approval before running logs for the purpose of meeting this requirement;

   (d) An approved casing inspection log shall be run before injection commences and whenever the permittee conducts a workover in which the injection tubing is pulled. The permittee may request the Director to waive this requirement if a satisfactory casing inspection log has been run within the previous five years; and

   (e) The permittee may use any other test approved by the Director in accordance with the procedures in 40 C.F.R. §146.8(d).

3. Prior Notice and Reporting - The permittee shall notify the Director in writing of his or her intent to demonstrate mechanical integrity at least 30 calendar days prior to such demonstration. At the discretion of the Director a shorter time period may be allowed. Failure to provide this prior notice will invalidate any successful mechanical integrity demonstration unless the shorter notice time was approved by the Director. Reports of mechanical integrity demonstrations which include logs must include an interpretation of results by a knowledgeable log analyst. The permittee shall report the results of a mechanical integrity demonstration within 30 calendar days after completion thereof.

4. Gauges - The permittee shall calibrate all gauges used in mechanical integrity demonstrations to an accuracy of not less than one-half (0.5) percent of full scale, prior to each required test of mechanical integrity. A copy of the calibration certificate shall be submitted to the Director or his or her representative at the time of demonstration and every time the gauge is calibrated. The gauge shall be marked in no greater than 5 psi increments. Failure to calibrate the gauges will invalidate any successful mechanical integrity demonstration.

5. Loss of Mechanical Integrity - If the permittee or the Director finds that the well fails to demonstrate mechanical integrity during a test, or fails to maintain mechanical integrity during operation, or that a loss of mechanical integrity as defined by 40 C.F.R. §146.8(a)(1) and (2) is suspected during operation, the permittee shall halt the operation immediately and follow the reporting requirements as directed in Part I(E)(12) of this permit. The permittee shall not resume operation until mechanical integrity is demonstrated and the Director gives written approval to recommence injection.

6. Mechanical Integrity Testing on Request From Director - The permittee shall demonstrate mechanical integrity at any time upon written notice from the Director.

I. FINANCIAL RESPONSIBILITY

1. Financial Responsibility - The permittee shall maintain financial responsibility and resources to comply with closure and post-closure requirements of this permit, in a manner consistent with 40 C.F.R. §§ 144.52 (a)(7), 144.60 through 144.70, and 146.73. A copy of the approved financial assurance mechanism for closure costs is in Part III(B) of this permit. The permittee shall update this mechanism to include post-closure costs before injection commences.

(a) Pursuant to 40 C.F.R. §§ 144.62(a), 146.71, and 146.73, the permittee must maintain a written cost estimate in current dollars for the Closure Plan and Post-Closure Plan as specified in 40 C.F.R. §§ 146.10, 146.72, and 146.73. The closure and post-closure cost estimate at any point in the life of the facility operation must equal the maximum cost of closure and post-closure at that time.

(b) Pursuant to 40 C.F.R. §§ 144.62(b) and 146.73, the permittee must adjust the cost estimate of closure and post-closure for inflation within 30 calendar days after each anniversary of the first estimate. The permittee shall follow the method described in 40 C.F.R. §144.62(b) or other method approved by the Director.

(c) The permittee must revise the closure and post-closure cost estimate whenever a change in the Closure Plan or Post-Closure Plan increases the cost of closure.

(d) If the revised closure and post-closure cost estimate exceeds the current amount of the financial assurance mechanism, the permittee shall submit a revised mechanism to cover the increased cost within 90 calendar days after the revision specified in Part I(I)(1)(b) and (c) of this permit.

(e) The permittee must keep on file at the facility a copy of the latest closure and post-closure cost estimate prepared in accordance with 40 C.F.R. §§ 144.62, 146.72, and 146.73, during the operating life of the facility.

2. Insolvency - The permittee must notify the Director within 10 business days of any of the following events:

(a) The bankruptcy of the trustee or issuing institution of the financial mechanism; or

(b) Suspension or revocation of the authority of the trustee institution to act as trustee; or

(c) Loss by the institution issuing the financial mechanism of its authority to issue such an instrument.

3. Notification - The permittee must notify the Director by certified mail of the commencement of voluntary or involuntary proceedings under Title 11 (Bankruptcy), U.S. Code naming the permittee as debtor, within ten business days after the commencement of the proceeding. A guarantor of a corporate guarantee must make such a notification if he or she is named as debtor, as required under the

terms of the guarantee.

4. Establishing Other Coverage - The permittee must establish other financial assurance or liability coverage acceptable to the Director, within 60 calendar days of the occurrence of the events identified in Part I(I)(2) or (3) of this permit.

J. CORRECTIVE ACTION

1. Compliance - The permittee shall comply with 40 C.F.R. §146.64.

2. Corrective Action - A plan for corrective action under 40 C.F.R. §146.64 is not necessary at this time because no improperly plugged, completed, or abandoned wells which penetrate the confining zone for this well are known to be present in the Area of Review (AOR). Within 30 days of written notification from the Director that there are improperly plugged, completed, or abandoned wells or wells for which adequate plugging or completion information is unavailable present in the AOR which penetrate the confining zone for this well, the permittee shall submit a Corrective Action Plan with a schedule for its implementation for approval by the Director. The AOR is specified in the administrative record for this permit.

3. Prohibition of Movement of Fluids into USDWs - Should upward migration of fluids through the confining zone of this permitted well be discovered within the AOR for this well, the permittee shall immediately cease injection into this well until the situation has been corrected and reauthorization has been given by the Director. The permittee shall immediately notify the USEPA and the Michigan Department of Environmental Quality (MDEQ) within 24 hours of the discovery of the problem and submit written confirmation transmitted by letter within five days. This includes but is not limited to fluid migration through any previously unknown, improperly plugged or unplugged well due to the injection of permitted fluids, or due to problems with the casing of this well due to the injection of permitted fluids.

4. Corrective action under Section 3004(u) of RCRA - The permittee shall comply with corrective action requirements for all solid waste management units at this facility, as required by any RCRA permit issued to this facility.

K. INJECTION OF RESTRICTED HAZARDOUS WASTES

1. Further Requirements - The permittee shall comply with all

regulations set forth under 40 C.F.R. Part 148. The permittee may continue to inject the restricted hazardous wastes specified in Part III(E) of this permit as long as it meets all other requirements of this permit and applicable regulations and at least one of the following remains in effect:

(a) an extension of the effective date of a prohibition has been granted pursuant to 40 C.F.R. §148.4 with respect to such waste;

(b) the exemption granted in response to a petition filed under 40 C.F.R. §148.20 to allow injection of restricted wastes, with respect to those wastes and wells covered by the exemption, remains in effect, and all conditions of the exemption are met;

(c) land disposal ban dates have not been promulgated for the hazardous constituents of the wastestream; or

(d) the concentration of hazardous constituents in each RCRA hazardous waste are below the treatment standards for each specific RCRA waste code found at 40 C.F.R. §268.43 - Table CCW.

2. Injection Limitations - Characteristics and concentrations of hazardous constituents of injected waste shall not exceed any limits listed in Part III(E) of this permit. The monthly average injection rate for the permitted well shall not exceed the limitation listed in Part III(A) of this permit.

3. Exemption/Permit Modifications - This permit may be modified to permit injection of wastes other than those listed in Part III(E) of this permit or wastes in concentrations in excess of those listed in Part III(E) of this permit provided an exemption to statutory restrictions has been obtained pursuant to the provisions of 40 C.F.R. Part 148.

4. False Information - The permittee must notify the Director within 48 hours after obtaining knowledge that information submitted in support of a request for exemption under 40 C.F.R. Part 148 is false, inaccurate, or incomplete.

5. Petition Termination - Upon written notification from the Director that an exemption granted under 40 C.F.R. §148.20 has been terminated, the permittee shall immediately cease injection of all prohibited hazardous wastes.

6. Petition Renewal - The Director may require a new or updated

40 C.F.R. Part 148 demonstration prior to renewing this permit if the Director has determined that the basis for granting the exemption to the statutory restriction is affected by new information.

L. COMMENCEMENT OF INJECTION

Injection into the well is prohibited until the permittee obtains written approval from the Director. Approval will not be granted until the following conditions are met:

1. Information to be Submitted: The operator has submitted and obtained the Director's written approval of the following documents:

   (a) copies of all data, well tests, and logs gathered during the drilling and construction of the well;

   (b) a notice of completion of construction using EPA Form 7520-9, submitted by the permittee to the Permit Writer, by certified mail with return receipt requested, after construction is completed;

   (c) a groundwater monitoring plan;

   (d) a corrosion monitoring plan;

   (e) a hydrogeologic compatibility determination;

   (f) an updated closure and post-closure plan if requested by the Director based on information gathered during the drilling and completion process;

   (g) updated financial assurance to cover the full closure and post-closure costs; and

   (h) a submission pursuant to 40 C.F.R. Part 148 as detailed in Part I(K) above (for wastes banned under 40 C.F.R. Part 148).

2. Director Inspection - All well monitoring equipment is operational and has been inspected by the USEPA or its representative in accordance with 40 C.F.R. §144.51(m)

3. Mechanical Integrity Demonstration - Mechanical integrity of the well has been demonstrated in accordance with 40 C.F.R. §146.8(a)(1) and (2) and with Part I(H)(1) and (2) of this permit.

4. Warning and Shut-off Systems - The automatic warning and shut-off system required in Part II(B)(4) of this permit must pass a test witnessed by an authorized representative of the Director subjecting it to simulated failure conditions. The permittee must certify that a trained operator will be on site at all times when the well is operating to implement the system.

5. Notice to Inject - The permittee is prohibited from commencing injection until it receives written notice from the Director that the well has been constructed in compliance with this permit and that Part III(E) has been modified to add any approved sources.

M. PERMIT REOPENER

This permit may be reopened after an exemption to the restricted hazardous waste land disposal prohibition has been issued or modified under 40 C.F.R. Part 148 to incorporate any conditions which may have been attached to such exemption.

PART II
WELL SPECIFIC CONDITIONS FOR UIC PERMITS

A. CONSTRUCTION

1. Siting - The injection well shall inject only into the formation and depths listed on the cover page of this permit. At no time shall injection occur into a formation which is above the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

2. Casing and Cementing - Notwithstanding any other provisions of this permit, the permittee shall case and cement the well to prevent the movement of fluids into or between USDWs for the expected life of the well. The casing and cement used in the construction of this well are shown in Part III(C) of this permit.

3. Tubing and Packer Specifications - The permittee shall inject only through tubing with a packer set within the long string casing within 100 feet above the top of the injection zone. The tubing and packer used in the well are represented in engineering drawings contained in Part III(C) of this permit.

4. Wellhead Specification - The permittee shall maintain a female coupling and valve on the wellhead, to be used for independent injection pressure readings.

B. OPERATIONS

1. Injection Pressure Limitation - Except during stimulation, the permittee shall not cause or permit the injection pressure at the wellhead to exceed the maximum limitation which is specified in Part III(A) of this permit or initiate fractures or propagate existing fractures in the injection zone. In no case shall injection pressure initiate fractures or propagate existing fractures in the confining zone or cause the movement of injection or formation fluids into a USDW.

2. Additional Injection Limitation - No substances other than those identified in Part III(E) of this permit shall be injected. The permittee shall submit a certified statement attesting to compliance with this requirement at the time of the annual report.

3. Annulus Fluid and Pressure - The permittee shall fill the annulus between the tubing and the long string casing with a fluid approved by the Director and identified in the administrative record of this permit. The permittee shall submit any proposed change in the annulus fluid the approval of the Director before implementation.

The permittee shall maintain a positive pressure on the annulus over the entire length of the tubing as specified in Part III(A) of this permit, except during workovers or times of annulus maintenance.

4. Warning and Shut-off System - The permittee shall install an automatic warning and automatic shut-off system prior to the commencement of injection. The permittee shall continuously operate and maintain the system after the commencement of injection to stop injection within 30 minutes of any of the following situations:

   (a) Pressure changes in the annulus or annulus/tubing differential signifying or identifying possible deficiencies in mechanical integrity; or

   (b) Injection pressure, annulus pressure, or annulus/tubing differential pressure reaches the pressure limits as specified in Part III(A) of this permit.

   A trained operator must be on site at all times during operation of the well. The permittee must test the warning system and shut-off system prior to receiving authorization to inject, and at least once every twelfth month after the last approved demonstration. These tests must involve subjecting the system to simulated failure conditions and must be witnessed by the Director or his or her representative.

5. Precautions to Prevent Well Blowouts

   (a) The permittee shall maintain on the well at all times a pressure that will prevent the return of the injection fluid to the surface. If there is gas formation in the injection zone near the well bore, such gas shall be prevented from entering the casing or tubing. The well bore shall be filled with a high specific gravity fluid during workovers to maintain a positive (downward) gradient and/or a plug shall be installed that can resist the pressure differential. A blowout preventer shall be kept in proper operational status during workovers which involve tubing or packer removal.

   (b) Where the injected wastes have the potential to react with the injection formation to generate gases, the permittee shall follow the procedures below to assure that a backflow or blowout does not occur:

      (i) Limit the temperature, pH or acidity of the injected waste; and

(ii) Develop procedures necessary to assure that pressure imbalances do not occur.

C. MONITORING

1. Sampling Point - The injection fluid samples shall be taken at the sampling locations specified in the approved Waste Analysis Plan for this permit.

2. Continuous Monitoring Devices - The permittee shall install continuous monitoring devices and use them to monitor injection pressure, injection volume, sight glass level, pH, flow rate and the pressure on the annulus between the tubing and the long string of casing. The monitoring results shall be submitted to the Director as specified in Part II(D) and Part III(A) of this permit and maintained for USEPA's inspection at the facility.

3. Waste Analysis Plan - The permittee shall comply with the approved Waste Analysis Plan (the Plan) which describes the procedures used to monitor the nature of injected fluids and the procedures which will be carried out to comply with Part I(E)(10) of this permit. The Plan is a part of the permit file and compliance with this Plan is a condition of the permit. A copy of the approved Plan shall be kept at the facility. The permittee shall assure that the plan remains accurate and the analyses remain representative and shall so certify at the time of the annual report.

4. Ambient Monitoring - At least every twelfth month, the permittee shall, pursuant to 40 C.F.R. §146.68(e), monitor the pressure buildup in the injection interval, including, at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve. The permittee shall submit plans for this testing at least 30 days before the testing is planned, and is prohibited from performing the testing unless the Director has given written approval.

5. Compatibility of Well Material - The permittee shall continuously monitor corrosion of the construction material(s) by a method approved by the Director. Authorization to inject shall not be given until the corrosion monitoring plan has been approved by the Director. The approved corrosion monitoring plan shall be part of the permit file for this permit and the permittee shall maintain and comply with the plan as if it were fully set forth in the permit. Continuous corrosion monitoring shall be operational at the time of the commencement of injection. The permittee shall report loss of mass, thickness, cracking, pitting and other signs of corrosion at least quarterly.

D. REPORTING REQUIREMENTS

The permittee shall submit all required reports to the Director at the following address no later than the end of the month following the reporting period. Monitoring reports under Part II(D)(1), (2), and (3) are not required until the initial authorization to inject has been granted or otherwise required by the Director:

United States Environmental Protection Agency
Region 5, WU-16J
77 West Jackson Blvd.
Chicago, Illinois 60604-3590
ATTN: UIC Branch, DI Section

1. Monthly Reports. The permittee shall submit monthly reports of the following information:

(a) Results of the injection fluid analyses specified in Part III(A) and (E) of this permit and the approved Waste Analysis Plan as recorded in the permit file for this permit. In reporting fluid analyses, the permittee shall identify the waste components of the waste stream by their common name, chemical name, structure and concentration, or as approved by the Director.

(b) A tabulation of maximum injection pressure, maximum and minimum sight glass levels, maximum and minimum annulus pressure, injectate pH, flow rate, and minimum differential between simultaneous measurements of injection pressure and annulus pressure for each day of the month;

(c) Appropriately scaled graphs representing the continuous monitoring as required in Part II(C)(2) of this permit showing injection pressure, annulus pressure, flow rate, pH injection volume, and sight glass levels. One graph must include, at a minimum, daily maximum injection pressure and daily average flow rate on a single monthly chart. A second graph must display the daily maximum and minimum sight glass levels;

(d) A statement of the total volumes of fluid injected to date, in the current calendar year and in the current calendar month. If non-waste-water (for instance, a continuous flush of water for dilution) is injected, the total, annual, and monthly injected volumes for wastewater only, as well as total injected volume must be reported;

(e) A tabulation of the dates, amounts and types of liquid added to or removed from the annulus system during the month, and

the cumulative additions and the cumulative subtractions for the current month and each of the past 12 months; and

(f) Any noncompliance with conditions of this permit, including but not limited to:

(i) Any event that exceeds operating parameters for annulus pressure or injection pressure or annulus/tubing differential as specified in the permit; or

(ii) Any event which triggers an alarm or shutdown device required in Part II(B)(4) of this permit.

2. Quarterly Reports - The permittee shall report the following at least every quarter. Quarterly reporting periods shall begin on the first day of January, April, July, and October of each year:

(a) Results of the injection fluid analyses specified in Parts III(A) and (E) of this permit, if applicable. In reporting fluid analyses, the permittee shall identify the waste components of the waste stream by their common name, chemical name, structure and concentration, or as approved by the Director. Laboratory reports shall be submitted with the first monthly monitoring report following the close of the quarterly reporting period;

(b) The results of the continuous corrosion monitoring as stipulated in Part II(C)(5) of this permit;

(c) Any quarterly analyses of ground water monitoring wells at this facility; and

(d) Any other monitoring required on a quarterly basis.

3. Annual Reports - The permittee shall report the following at least every twelfth month from the effective date of this permit:

(a) Results of the injection fluid analyses specified in Part III(A) and (E) of this permit, and the approved Waste Analysis Plan as recorded in the permit file for this permit. In reporting fluid analyses, the permittee shall identify the waste components of the waste stream by their common name, chemical name, structure and concentration, or as approved by the Director. This report must include statements showing that the permittee has met the requirements of Part I(E)(10), Part II(B)(2), and Part II(C)(3) of this permit.

(b) Results of pressure fall-off testing required by 40 C.F.R.

§146.68(e) and of other annual requirements of the Groundwater Monitoring Plan which is a part of the permit file for this permit.

4. Reports on Well Tests and Workovers - Within 30 calendar days after the activity, the permittee shall report to the Director the results of demonstrations of mechanical integrity, any well workover, or results of other tests required by this permit. If the permittee does not make these reports within the required time, the Director may consider the tests to have been failed.

PART III
ATTACHMENTS

These attachments include, but are not limited to, permit conditions and plans concerning operating procedures, monitoring and reporting, as required by 40 C.F.R. Parts 144, 146 and 148. The permittee shall comply with these conditions and adhere to these plans as approved by the Director, as follows:

A. SUMMARY OF OPERATING, MONITORING AND REPORTING REQUIREMENTS

B. CLOSURE PLAN

C. CONSTRUCTION DETAILS

D. GENERAL WASTE CHARACTERISTICS

E. LIST OF APPROVED SOURCES

ATTACHMENT A

SUMMARY OF OPERATING, MONITORING AND REPORTING REQUIREMENTS

CHARACTERISTIC	LIMITATION	MINIMUM MONITORING FREQUENCY	MINIMUM REPORTING FREQUENCY
Injection Pressure*	765 psig	continuous	monthly
Annulus Pressure	100 psig minimum	continuous	monthly
Annulus Pressure Differential	at least 100 psig over injection pressure	continuous	monthly
Injection Rate** (Average for both wells #1-12 and #2-12)	166 gpm	continuous	monthly
Injection Rate (Maximum instantaneous)	270 gpm	continuous	monthly
Sight Glass Level		continuous	monthly
Cumulative Volume		daily	monthly
Annulus Fluid Loss		monthly	monthly
Chemical Composition of Injected Fluids***		monthly	monthly
Physical Characteristics of Injected Fluids***		monthly	monthly
pH of Injected Fluids		continuous	monthly

*The maximum injection pressure was determined by site specific testing of the injection zone. The limitation on injection pressure will serve to prevent injection-formation fracturing.

** Average injection rate shall be reported using the calculation formulas and form on page A-2 of 7 of this permit

*** As specified in the approved Waste Analysis Plan, found in the permit file for this permit. Monitoring frequency could be monthly, quarterly or annually.

Calculation of average injection rate for the EDS commercial hazardous Class I permits in Wayne Co., Michigan.

CURRENT REPORTING YEAR _____
CURRENT REPORTING MONTH _____

Date of the first injection at either well at the Citrin Road Facility _____ (month and year)

Whole number of months of injection _____

365.25 days per year ÷ 12 months per year = 30.4375 days per month
30.4375 days per month × 1440 minutes per day = 43,830 minutes per month

CURRENT MONTH (all volumes in gallons)

MI-163-1W-C007 – Well #1-12	MI-163-1W-C008 – Well #2-12

	Injected Waste	Injected Non-Waste	Total injected	Injected Waste	Injected Non-Waste	Total injected	Lifetime Combined Injected Vol.
Current Month							
Since facility first injected							

(_____ lifetime number of months of injection × 43,830 minutes/month) = _____ minutes of injection

Lifetime combined injected vol. _____ ÷ _____ minutes of injection = _____ g.p.m. [average inj. rate]

HAZARDOUS SUBSTANCES LIMITATIONS AND REPORTING

RCRA CODE	NAME	LIMITATION	MINIMUM MONITORING FREQUENCY	MINIMUM REPORTING FREQUENCY
F039, P004	Aldrin	200 g/l	monthly	monthly
U021	Benzidine	200 g/l	monthly	monthly
P016,K017	sym-Dichloromethyl ether	160 g/l	monthly	monthly
F020,F021, F022,F026, F027,F028, F032,F039, K043,K099	Hexachlorodibenzo-p-dioxins	6 g/l	monthly	monthly
K174,K178	Hexachlorodibenzo-p-dioxins, all	6 g/l	monthly	monthly
F039,P082	N-Nitrosodimethylamine	200 g/l	monthly	monthly
F039,K174, K178	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	6 g/l	monthly	monthly
F039,K174, K178	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	6 g/l	monthly	monthly
F020,F021, F022,F026, F027,F028, F032,F039, K043	Tetrachlorodibenzo-p-dioxins (TCCD)	30 g/l	monthly	monthly
K174,K178	Tetrachlorodibenzo-p-dioxins (TCCD)	30 g/l	monthly	monthly
P110	Tetraethyl lead	100 g/l	monthly	monthly

PROPOSED WASTE "SOURCE" INFORMATION

The information shown in Subparts A through F of this Attachment must be submitted by the permittee initially for each proposed waste "source", pursuant to Part II(B)(2) of this permit. The permittee may incorporate the information into a form of its own, provided that all information is included, and that the same form is used for all proposed "sources". The permittee, by submitting appropriate knowledge of waste, shall specify that the waste from each "source" is either hazardous or non-hazardous as defined at 40 C.F.R. §§ 261.30-33. Appropriate knowledge of waste may consist of any or all of the following three categories: (1) knowledge of the waste generation process, (2) detailed record-keeping, or (3) waste analysis data. The permittee must receive written authorization from the USEPA prior to injecting waste from this "source". Authorization shall consist of a final minor-modified permit, which shall list this "source" as an approved "source" in Part III(E) of this permit. Upon receiving the minor-modified permit, the permittee shall be authorized to inject this waste, subject to the conditions of this permit and the permittee's approved waste analysis plan. The USEPA will make every reasonable effort to expedite the administrative processing of minor permit modifications.

For proposed hazardous or non-hazardous waste "sources", reporting of quarterly sampling and analysis shall be required, as specified in Part II(D)(2) of this permit. Certain waste "sources" may require more stringent sampling and analysis.

A. Permittee Information

1) Owner/Operator Name
2) Owner/Operator Address (Street, City, State, Zip Code)
3) Facility Contact Name and Telephone Number
4) Well Location (Township, Range, Section, Quarter Section, footage NSL, EWL)
5) USEPA UIC Permit Number
6) State Permit Number
7) Well Name

B. Proposed Generator ("Source") Information

1) "Source" Identification Number
2) Generator Name
3) Generator Address (Street, City, State, Zip Code)
4) Generator Contact Name and Telephone number
5) USEPA Identification Numbers (if applicable)

For Oilfield Waste "Sources" Only:
1) "Source" Identification number
2) MDEQ Oilfield Name
3) Location (Township, Range, and Section)
4) Geologic Formation

The "Source" identification number is a unique number assigned to the waste generator at the location specified above.

C. Waste Transporter Information

1) Transporter name
2) Transporter Address (Street, City, State, Zip Code)
3) Transporter Contact Name
4) Transporter Contact phone number
5) USEPA Identification numbers (if applicable)

D. Waste "Source" Characterization

1) Sample analysis results, which include:

   a) Corrosivity
   b) Reactivity (as applicable to sample matrix)
   c) Ignitability
   d) Toxicity
   e) Specific Conductance
   f) Specific Gravity
   g) Temperature
   h) All other constituents which are indicated by the generator as constituting a major portion of the waste stream (i.e., greater than 0.01 percent by mass).

   The test for toxicity shall follow the Toxicity Characteristic Leaching Procedure and should include all appropriate constituents (which are listed at 40 C.F.R. 261.24). The permittee may rely on the generator's knowledge of waste consistent with 40 C.F.R. 262.11 and all appropriate knowledge of waste to reduce the number of constituents tested.

2) Any appropriate analytical results necessary to identify waste constituents which may indicate a listed hazardous waste as defined at 40 C.F.R. §§ 261.31, 261.32, 261.33, or 261.34.

3) Sampling and Analysis Description

The following information must be specified for each sampling event:

   a) If appropriate, a letter from the permittee which describes

how the waste was determined to be nonhazardous
b) Sample collector's name, title, and employer
c) Sample collection method and preservation technique
d) Sample collection point

The following information must be specified for each parameter:

e) Analytical method for parameter detection/quantification
f) Analytical method accuracy
g) Upper and lower analytical method quantitation limits

E. Quality Assurance and Quality Control (QA/QC)

A description of the QA/QC Protocol followed:

a) Equipment cleaning blanks
b) Trip blanks
c) Sample duplicates
d) Chain of custody
e) Equipment calibration
f) Data reduction and validation

These requirements are specified in the QA/QC portion of the permittee's waste analysis plan.

F. Historical background of facility

Historical background of the facility, including a detailed description of the process involved in generating the waste, how it is collected and stored. Indicate whether the proposed waste "source" is a one-time "source". The description should identify any periodic changes in facility operations which alter the composition of the waste stream. The permittee should keep in mind that the purpose of requesting this information is to assure that the monitoring frequency for this "source" accounts for changes in the nature of the waste due to changes in facility operations. If a change in operations causes a change in the waste stream, the permittee must require monitoring which is representative of ongoing operations. Monitoring data supplied by the waste generator must be representative of the waste being generated for the entire period between sampling events.

G. Periodic Monitoring of Approved "Sources"

Oilfield Brine Wastes
All approved oilfield brine wastes shall be monitored at a minimum for the following parameters: Sodium, Calcium, Magnesium, Barium, Total Iron, Chloride, Sulfate, Carbonate, Bicarbonate, Sulfide, Total Dissolved Solids, pH, Resistivity (ohm-meters @ 75°F), and Specific Gravity.

Fingerprint Analysis
All wastes that require fingerprint analysis as specified in Part III(E) of this permit shall, at a minimum, be subject to tests for the following:

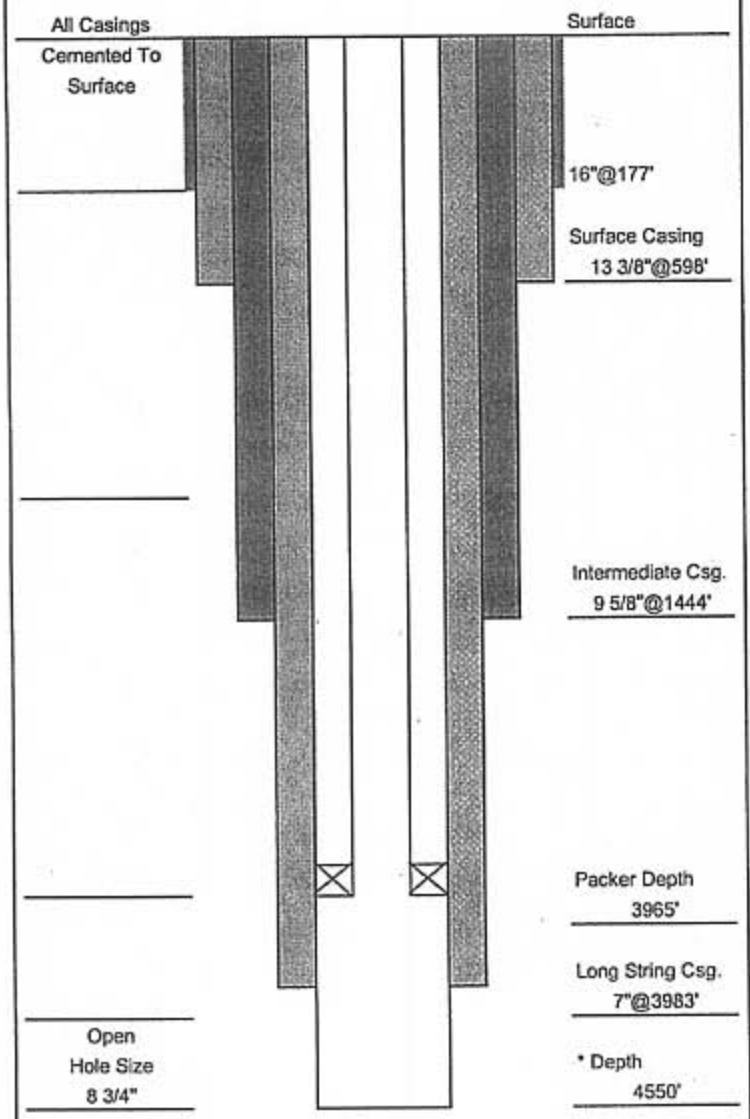
pH,
Total Settleable Solids,
Temperature,
Color,
Flashpoint,
Conductivity,
Specific Gravity,
Odor,
and any other analyses deemed appropriate for characterizing the injected waste.

Periodic Anlysis
All non-oilfield brine waste sources will be analyzed as specified in Part III(E) of this permit.

ATTACHMENT Q-5

ORIGINAL WELL CONSTRUCTION DURING OPERATION

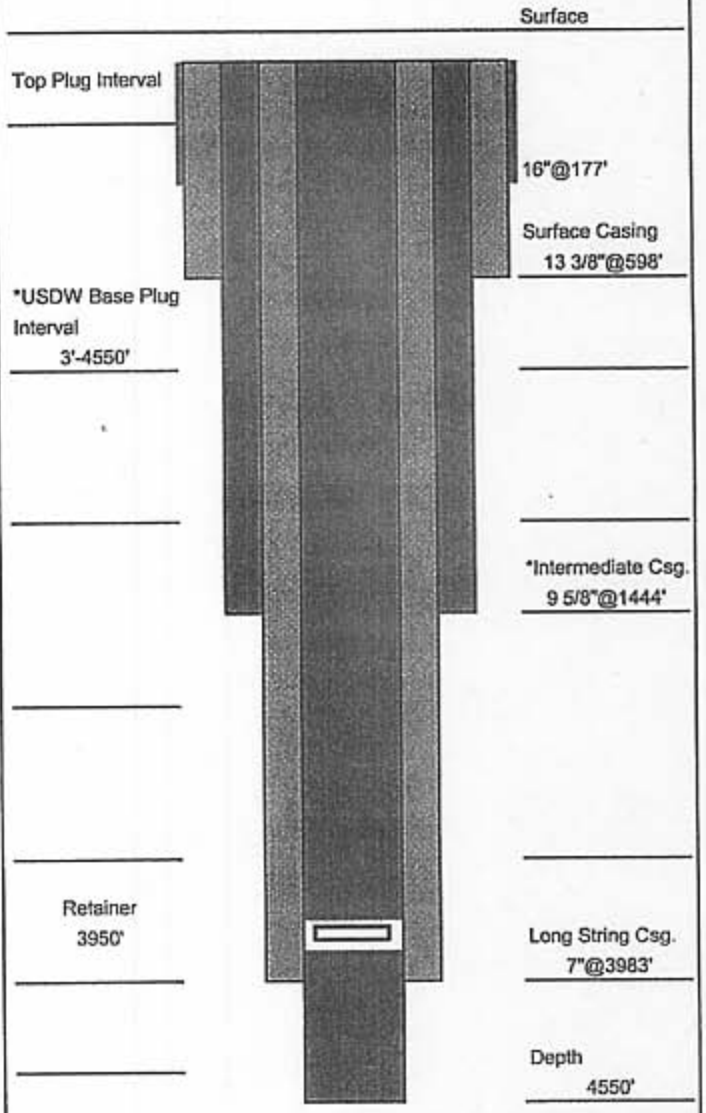
EDS 2-12



** Add Any Additional Information

* May not Apply

PLUGGING AND ABANDONMENT CONSTRUCTION



** Add Any Additional Information

* May not Apply

LIST OF ALL OPEN AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED

Specify Open Hole/ Perforations/ Varied Casing	From	To	Formation Name

ATTACHMENT Q-5

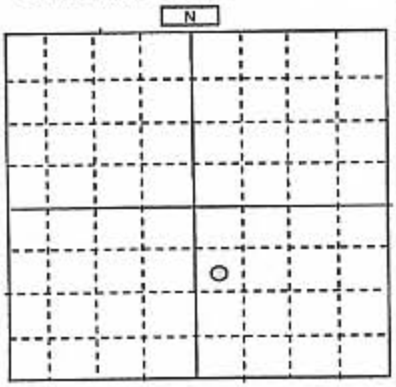
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PLUGGING AND ABANDONMENT PLAN

WELL NAME & NUMBER, FIELD NAME, LEASE NAME & NUMBER
EDS 2-12

NAME, ADDRESS, & PHONE NUMBER OF OWNER / OPERATOR
Environmental Disposal Systems, Inc.
199 West Brown Street, Suite 200
Birmingham, MI 48009
(248) 642-4214

Locate Well and Outline Unit on Section Plat - 640 Acres



STATE	COUNTY	STATE PERMIT NUMBER
MI	Wayne	M-453

SURFACE LOCATION DESCRIPTION
SW/4 NW/4 SE/4 Sec 12 T3S-R9E Romulus Township

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT
Surface Location 1000' ft. From (N/S) North Line of Quarter Section
And 280' ft. From (E/W) West Line of Quarter Section

TYPE OF AUTHORIZATION
- [x] Individual Permit
- [ ] Rule
- [ ] Area Permit

Number of Wells in Area Permit ____

US EPA Permit Number MI-163-1W-C008

WELL ACTIVITY
- [x] Class I
  - [x] Hazardous
  - [ ] Nonhazardous
- [ ] Class II
  - [ ] Brine Disposal
  - [ ] Hydrocarbon Storage
  - [ ] Enhanced Recovery
- [ ] Class III
- [ ] Class IV

CASING/TUBING/CEMENT RECORD AFTER PLUGGING AND ABANDONMENT

Size	Wt (lb/ft) TBG/CSG	Original Amount (CSG)	CSG to be Left in Well	Hole Size	Sacks Cement Used	Type
16"	60	177'	177'	20"	300	Class A/Poz
13 3/8"	48	598'	598'	17.5"	610	Class A/Poz
9 5/8"	36	1444'	1444'	12 1/4"	725	Class A/Poz
7"	26	3983'	3983'	8 3/4"	*	Class A/Epoxy

METHOD OF EMPLACEMENT OF CEMENT PLUGS
- [x] Balance Method
- [ ] Dump Bailer Method
- [ ] Two Plug Method
- [ ] Other

CEMENT TO PLUG AND ABANDON DATA	Plug #	Plug #	Plug #	Plug#	Plug #	Plug #	Plug #
Size of Hole or Pipe in Which Plug Will Be Placed (inches)	8 3/4"	6.276"					
Calculated Top of Plug (ft.)	3950'	3'					
Measured Top of Plug (ft.)							
Depth to Bottom of Plug (ft.)	4550'	3950'					
Sacks of Cement to be Used	215	720					
Slurry Volume to be Used (cu. Ft.)	254	850					
Slurry Weight (lb./gal.)	15.6	15.6					
Type of Cement, Spacer or Other Material Used	Class A	Class A					
Type of Preflush Used	FW	FW					

DESCRIPTION OF PLUGGING PROCEDURE

See ATTACHMENT Q-2

* 1100 scaks class A and 686 gallons epoxy

ESTIMATED COST OF PLUGGING AND ABANDONMENT

Cement	$ - 14000	Cast Iron Bridge Plug	$ -		
Logging	$ -	Cement Retainer	$ -	1000	
Rig or Pulling Unit	$ - 5000	Miscellaneous	$ -	2000	
	$ -	Total	$ -	22000	

CERTIFICATION

I certify under the penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref.40 CFR 144.32)

NAME AND OFFICIAL TITLE	SIGNATURE	DATE SIGNED
Paul McConnell, Director of Engineering	Paul McConnell	05/03/04

EPA Form 7520-14

CLOSURE PROCEDURE FOR THE EDS #2-12

1. Record pressure decay for a time period to be specified by the EPA.
2. Perform MIT test on 7" casing by pressuring tubing-casing annulus to 1500 psi.
3. MI & RU workover rig & auxiliary equipment
4. Displace tubing with clean brine.
5. ND wellhead & install BOP
6. Disengage seal assembly & TOH laying down fiberglass tubing.
7. Pick up 2 7/8" steel work string & run retrieving tool. Unset packer & TOH.
8. Run tubing open ended to 4550'.
9. Spot a 215 sack balanced Class A cement plug from 3864' to 4550'
10. Pull tubing up to 3950' & reverse out excess cement. TOH.
11. Run 7" retainer on tubing. Tag cement & set @ 3950'. Pressure test to 1500 psi.
12. Set a 180 sack balanced Class A cement plug from 2900' to 3950'.
13. Pull up to 3000' & reverse out excess cement.
14. Set a 180 sack balanced Class A cement plug from 1950' to 3000'.
15. Pull up to 2000' & reverse out excess cement.
16. Set a 180 sack balanced Class A cement plug from 950' to 2000'.
17. Pull up to 1000' & reverse out excess cement.
18. Set a 180 sack balanced Class A cement plug from surface' to 1000'.
19. TOH & WOC.
20. Tag cement & pressure test to 1500 psi.
21. Cut off 7" casing 3' below GL. Weld on steel plate.

NBD Bank
International Division
Letter of Credit Department
P.O. Box 330116
Detroit, Michigan 48232-6116
(313) 225-1000

In All Correspondence
Quote Our Reference No.

◄By Mail By Wire►

S.W.I.F.T.: NBDD US33
TELEX: 4320060
FAX: (313) 225-1111 U.S. Imports
(313) 225-2505 U.S. Exports
(313) 225-2149 Standby/Guaranty

IRREVOCABLE STANDBY LETTER OF CREDIT

U.S. ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL
FINANCIAL RESPONSIBILITY REQUIREMENT

DATE OF ISSUANCE: MAY 24, 1996

TO: U.S. ENVIRONMENTAL PROTECTION
AGENCY
UNDERGROUND INJECTION CONTROL
REGION 5
77 W. JACKSON
CHICAGO, IL 60604

DEAR SIR OR MADAM:

WE HEREBY ESTABLISH OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO. S146690 IN YOUR FAVOR, AT THE REQUEST AND FOR THE ACCOUNT OF ENVIRONMENTAL DISPOSAL SYSTEMS, INC., 199 WEST BROWN STREET. #200, BIRMINGHAM, MI 48229 UP TO THE AGGREGATE AMOUNT OF THIRTEEN THOUSAND EIGHT HUNDRED AND 00/100 U.S. DOLLARS ($13,800.00), AVAILABLE UPON PRESENTATION OF:

1. YOUR SIGHT DRAFT, BEARING REFERENCE TO THIS LETTER OF CREDIT NO. S146690. AND

2. YOUR SIGNED STATEMENT READING AS FOLLOWS: "I CERTIFY THAT THE AMOUNT OF THE DRAFT IS PAYABLE PURSUANT TO REGULATIONS ISSUED UNDER AUTHORITY OF THE SAFE DRINKING WATER ACT."

THIS LETTER OF CREDIT IS EFFECTIVE AS OF MAY 24, 1996 SHALL EXPIRE ON MAY 24, 1997, BUT SUCH EXPIRATION DATE SHALL BE AUTOMATICALLY EXTENDED FOR A PERIOD OF ONE YEAR ON MAY 24, 1997 AND EACH SUCCESSIVE EXPIRATION DATE, UNLESS, AT LEAST 120 DAYS BEFORE THE CURRENT EXPIRATION DATE, WE NOTIFY BOTH YOU AND ENVIRONMENTAL DISPOSAL SYSTEMS, INC. CERTIFIED MAIL THAT WE HAVE DECIDED NOT TO EXTEND THIS LETTER OF CREDIT BEYOND THE CURRENT EXPIRATION DATE. IN THE EVENT YOU ARE SO NOTIFIED, ANY UNUSED PORTION OF THE CREDIT SHALL BE AVAILABLE UPON PRESENTATION OF YOUR SIGHT DRAFT FOR 120 DAYS AFTER THE DATE OF RECEIPT BY BOTH YOU AND ENVIRONMENTAL DISPOSAL SYSTEMS, INC. AS SHOWN ON THE SIGNED RETURN RECEIPTS.

CONTINUED ON NEXT PAGE

NBD Bank
International Division
Letter of Credit Department
P.O. Box 330116
Detroit, Michigan 48232-6116
(313) 225-1000

In All Correspondence Quote Our Reference No.

◄By Mail By Wire►

S.W.I.F.T.: NBDD US33
TELEX: 4320060
FAX: (313) 225-1111 U.S. Imports
(313) 225-2505 U.S. Exports
(313) 225-2149 Standby/Guaranty

OUR REF. NO. S146690 PAGE 2

WHENEVER THIS LETTER OF CREDIT IS DRAWN ON UNDER AND IN COMPLIANCE WITH THE TERMS OF THIS CREDIT, WE SHALL DULY HONOR SUCH DRAFT UPON PRESENTATION TO US, AND WE SHALL DEPOSIT THE AMOUNT OF THE DRAFT DIRECTLY INTO THE STANDBY TRUST FUND OF ENVIRONMENTAL DISPOSAL SYSTEMS, INC. IN ACCORDANCE WITH YOUR INSTRUCTIONS.

R.A. VIBBERT II
VICE PRESIDENT

DATE: MAY 24, 1996

C. SMITH
SR. LETTER OF CREDIT SPECIALIST

THIS CREDIT IS SUBJECT TO THE MOST RECENT EDITION OF THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS, PUBLISHED BY THE INTERNATIONAL CHAMBER OF COMMERCE.

BANK ONE.

RECEIVED
MAY 11 2004
UIC BRANCH
EPA REGION 5

Bank One, NA
Global Trade Services
One Bank One Plaza
Mail Code IL1-0236
Chicago, IL 60670
Tel: (800) 634-1969 Fax: (312) 954-0203
SWIFT: FNBCUS44
Telex: ITT4330253 FNBCUI

DATE: MAY 10, 2004

DRAFTS DRAWN MUST BE MARKED
WITH OUR REFERENCE NO. 5146690
OPENER'S REFERENCE NO. 5146690

AMENDMENT

BENEFICIARY:
U.S. ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL – REGION 5
77 WEST JACKSON
CHICAGO, IL 60604

GENTLEMEN:

WE ARE INSTRUCTED BY:

APPLICANT:
ENVIRONMENTAL DISPOSAL SYSTEMS, INC.
199 WEST BROWN STREET, #200
BIRMINGHAM, MI 48009

TO AMEND LETTER OF CREDIT NO. 5146690 AS ISSUED IN YOUR FAVOR.
THIS AMENDMENT IS AN INTEGRAL PART OF THE ORIGINAL LETTER OF CREDIT.
ALL OTHER TERMS AND CONDITIONS OF THE LETTER OF CREDIT INCLUDING PREVIOUS AMENDMENTS REMAIN UNCHANGED.

AMENDED TERMS:

THE LETTER OF CREDIT AMOUNT IS INCREASED BY U.S. $2,700.00 TO A NEW AGGREGATE OF U.S. $30,300.00.

YOURS VERY TRULY
BANK ONE, NA

PREPARER/ AUTHORIZED SIGNER

AUTHORIZED SIGNER

STATE OF MICHIGAN

JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY
HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973
RUSSELL J. HARDING, Director

REPLY TO:
GEOLOGICAL SURVEY DIVISION
735 E HAZEL ST
PO BOX 30256
LANSING MI 48909-7756

November 15, 1995

Douglas F. Wicklund
Environmental Disposal Systems, Inc.
199 West Brown Street
Suite 200
Birmingham, MI 48009

Dear. Mr. Wicklund:

NBD Bank cashiers check #0198187 in the amount of $10,000.00 has been received and handled per your instructions. The amount of this check has been added to your $15,000.00 cash bond currently on file resulting in a $25,000.00, Part 625 Mineral Well, Blanket Bond on behalf of Environmental Disposal Systems, Inc..

A copy of the State of Michigan receipt is enclosed. If you need further assistance regarding this bond please advise.

Sincerely,

David R. Davis
Assistant Supervisor
Permit and Bonding Unit
Geological Survey Division
(517) 334-6974

Enclosure(s)

cc: File

415 South Union St
2nd Floor
Traverse City, MI 49684
Ph: 231-941-4601
Fax: 231-941-4272

Oil-Ex. Inc.

October 10, 2002

Mr. Paul McConnell, Agent
Environmental Disposal Systems
199 West Brown St., Suite 200
Birmingham, MI 48009

Re: Closure Bid for EDS 1-12 & EDS 2-12

Dear Paul:

Per your request we have composed a bid to perform the closure according to the attached procedures on the above referenced disposal wells. The following is a per well bid to provide all required materials & services:

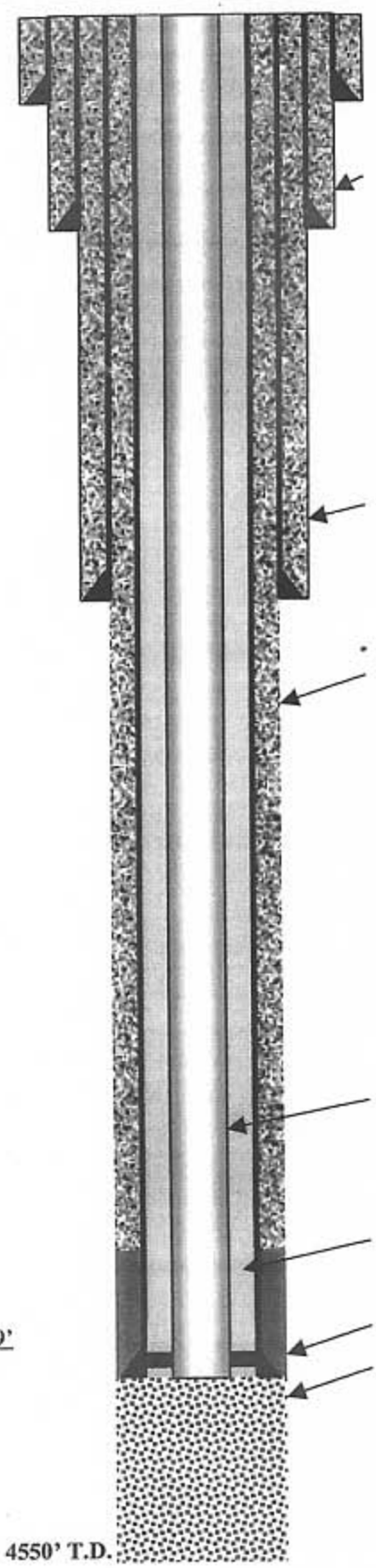
1. Workover Rig	$8000
2. Water	1000
3. Rentals	500
4. Cement and cementing	9000
5. Retainer	1000
6. Welder	500
TOTAL	**$20,000**

Sincerely,

Oil-Ex. Inc.

T.E. Haines
President

T E Haines



20" hole to 178' with 169' of 16" 60 #/ft **casing set at 177'** Annulus cemented to surface with 300 sacks Class "A" with 3% $CaCl_2$. Recovered 11 bbls of cement returns.

14-3/4" hole drilled to 642'. Opened to 17-1/2" below the 16" casing to 602'. 13-3/8 inch, 48 lb/ft, H-40, **ST&C casing was run and set with a stab-in float shoe at 598 feet RKB** . The annulus was cemented with 350 sacks of 65/35 Pozalin with 3% $CaCl_2$ followed by 200 sacks of Class "A" cement containing 3% $CaCl_2$. An additional 50 sacks of Class "A" Cement containing 3% $CaCl_2$ was pumped down the annulus between the 13-3/8" and 16" casing to fill to surface.

12-1/4" hole drilled to 1450'. 33 joints (1448") of 9-5/8", 36 #/ft, **casing was set at 1444"**with an insert float set at 1404'. Cemented with 725 sacks of Class "A" cement containing 3% $CaCl_2$. Cement circulated to surface with 33 barrels recovered.

8-34" hole drilled to 4550' T.D., logged and filled with sand to 3960' **Long-string casing** as follows: (1) Halliburton 7" float shoe at 3983', (2) Halliburton 7" float collar, (3) **5 jts. (97.39') of 7", 0.250" wall. Hastelloy C-276, STL casing** with the top 10' Teflon coated for galvanic corrosion inhibition, (4) 7 jts. (315.43') of 7", 26 #/ft, K-55, (5) Halliburton 7" **stage collar at 3565',** and (6) 78 jts. (3563') of 7", 26 #/ft, K-55, new casing. 1st Stage: 500 gal. Mud flush, 500 gal. methanol, 1500 gal. gelled diesel fuel at 11 ppg, **686 gal. Halliburton EPSEAL** at 12.5 lb/gal, displaced 1500 gal. gelled diesel fuel at 12.6 lb/gal and 116 barrels of drilling fluid. 2nd Stage: 310 sx of 50/50 Poz, 340 sx 50/50 Poz with microbond and 450 sx standard cement with microbond. 45 bbls circulated

Injection Tubing: 132 joints 4-1/2", TFP Red Box 2000, fiberglass reinforced plastic with 3 pup joints (10', 8', and 4'). Landed with 14,000 lbs tension.

Annulus filled with **corrosion inhibited brine water**

Injection Packer: Groundwater Protection Systems set at 3965'

Open hole completion in Eau Claire and Mt. Simon formations from 3983' to 4550'

SUBSURFACE	HOUSTON, TX SOUTH BEND, IN BATON ROUGE, LA

FIGURE M-2

Environmental Disposal Systems

Well No. 2-12

DATED: 10/22/02	APPROVED BY: JB	JOB NO. 60DS295
DRAWN BY: JB	CHECKED BY:NN	SCALE: N/A

Figure M-4
EDS 2-12
Wellhead

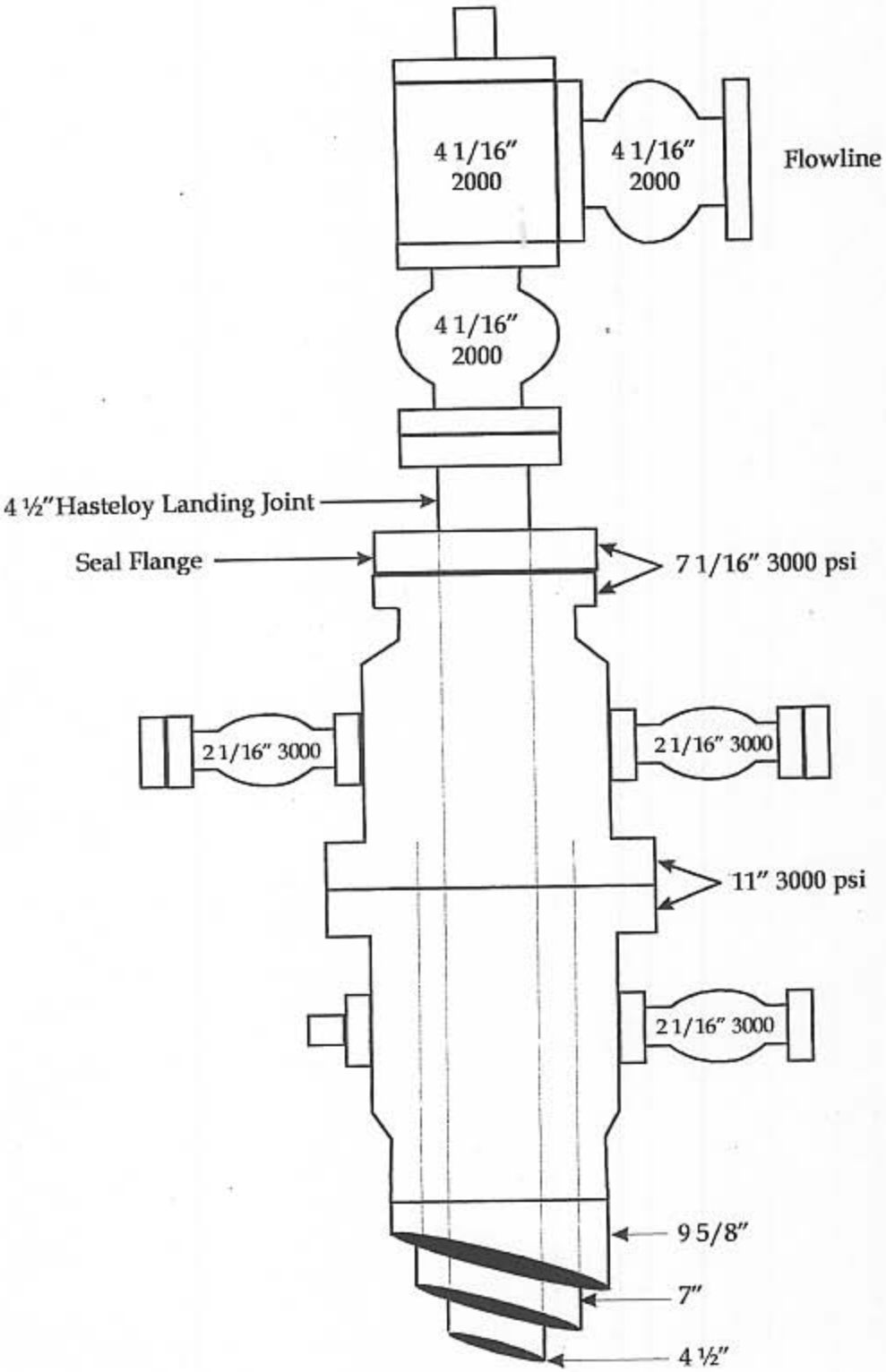
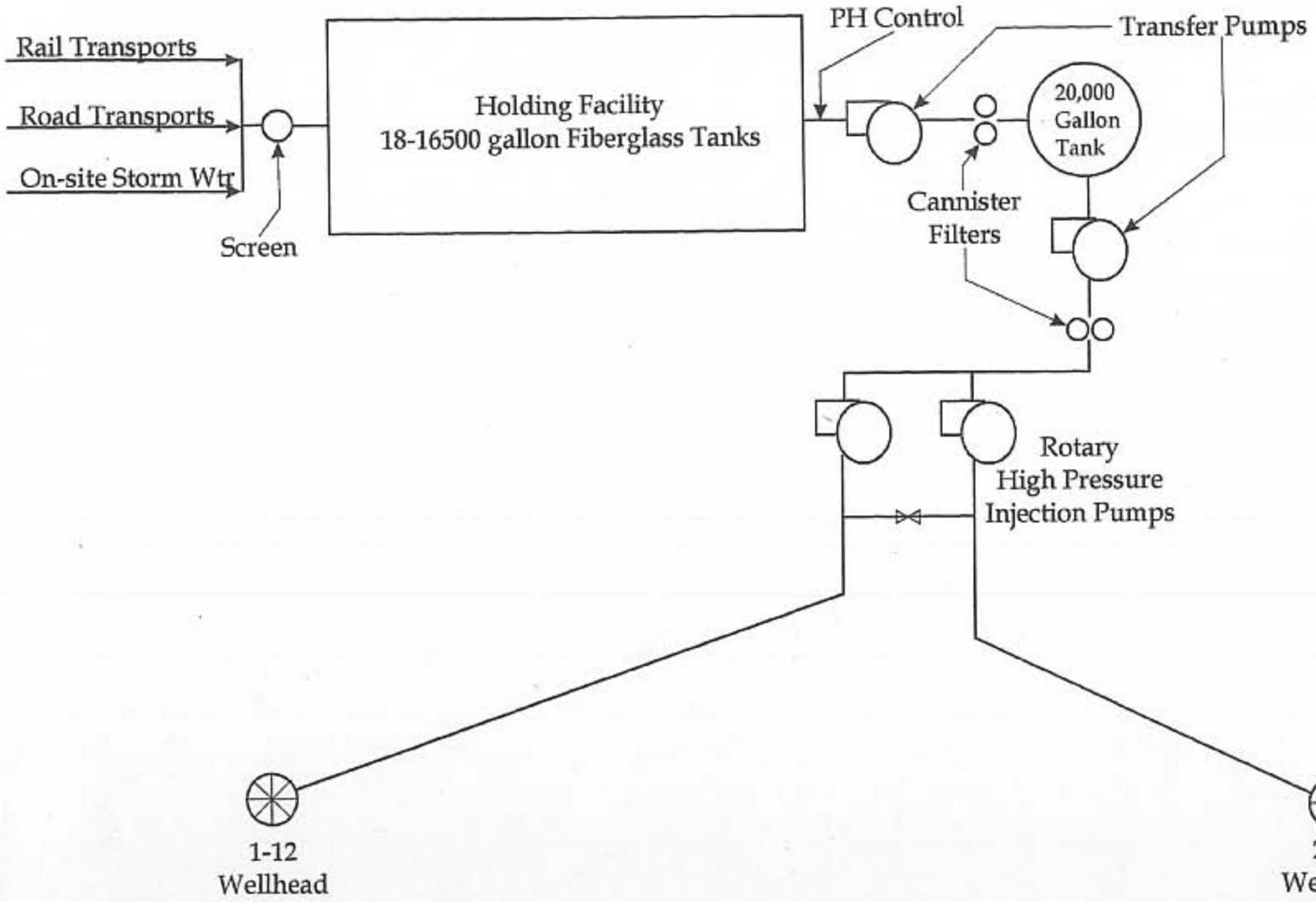


Figure K-1
EDS 1-12 & 2-12
Injection System



GENERAL WASTE CHARACTERISTICS

Source of Waste - Environmental Disposal Systems, Incorporated, (EDS) of Birmingham, Michigan, owns and will operate the proposed Class I facility in Romulus, Michigan. EDS plans to use this facility to dispose of hazardous and non-hazardous wastes as defined under RCRA, as specified at 40 C.F.R. 261.4.

Limitation - Only approved wastes, as specified in Attachment E of this permit, generated by clients of EDS may be injected into Well #2-12. All other fluids entering this borehole must be approved by the Director for purposes of well testing, stimulation, workovers, or as buffer fluids.

Waste Analysis Plan - This plan will be entered into this record and thus becomes an integral part of this permit.

Potential Waste Streams - At this time, no waste streams have been approved for disposal in the #2-12 well. Because this is a commercial well, it is not possible to list all potential waste streams that could be disposed of in the well. However, the likely hazardous waste streams will include:

- Diluted acid waste waters, such as used in metal cleaning and steel pickling operations, which would have a low pH and possibly an elevated level of heavy metals, such as chromium, cadmium, lead;

- Landfill leachates. Leachate may be from municipal and/or hazardous waste landfills; and

- Solvent-water mixtures, containing less than 10% solvents. These solvents would include, but not be limited to: tetrachloroethylene, trichloroethylene, methylene chloride, xylene, acetone, methanol, and carbon tetrachloride.

Attached are examples of the types of wastes that will likely be injected. These are not approved sources.

Non-hazardous waste streams would likely include similar waste streams as above except at non-hazardous levels, as well as various rinsates, waste waters from manufacturing processes, landfill leachates from municipal landfills, and brine from oil and gas operations (Class II well fluids).

LIST OF ALLOWED RCRA WASTE CODES

D002 D004 D005 D006 D007 D008 D009 D010 D011 D012 D013 D014 D015 D016 D017
D018 D019 D020 D021 D022 D023 D024 D025 D026 D027 D028 D029 D030 D031 D032
D033 D034 D035 D036 D037 D038 D039 D040 D041 D042 D043 F001 F002 F003 F004
F005 F006 F007 F008 F009 F010 F011 F012 F019 F020 F021 F022 F023 F024 F025
F026 F027 F028 F032 F034 F035 F037 F038 F039 K001 K002 K003 K004 K005 K006
K007 K008 K009 K010 K011 K013 K014 K015 K016 K017 K018 K019 K020 K021 K022
K023 K024 K025 K026 K027 K028 K029 K030 K031 K032 K033 K034 K035 K036 K037
K038 K039 K040 K041 K042 K043 K044 K045 K046 K047 K048 K049 K050 K051 K052
K060 K061 K062 K069 K071 K073 K083 K084 K085 K086 K087 K088 K093 K094 K095
K096 K097 K098 K099 K100 K101 K102 K103 K104 K105 K106 K107 K108 K109 K110
K111 K112 K113 K114 K115 K116 K117 K118 K123 K124 K125 K126 K131 K132 K136
K140 K141 K142 K143 K144 K145 K147 K148 K149 K150 K151 K156 K157 K158 K159
K160 K161 K169 K170 K171 K172 K173 K174 K175 K176 K177 K178 P001 P002 P003
P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018
P020 P021 P022 P023 P024 P026 P027 P028 P029 P030 P031 P033 P034 P036 P037
P038 P039 P040 P041 P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P054
P056 P057 P058 P059 P060 P062 P063 P064 P065 P066 P067 P068 P069 P070 P071
P072 P073 P074 P075 P076 P077 P078 P081 P082 P084 P085 P087 P088 P089 P092
P093 P094 P095 P096 P097 P098 P099 P101 P102 P103 P104 P105 P106 P108 P109
P110 P111 P112 P113 P114 P115 P116 P118 P119 P120 P121 P122 P123 P127 P128
P185 P188 P189 P190 P191 P192 P194 P196 P197 P198 P199 P201 P202 P203 P204
P205 U001 U002 U003 U004 U005 U006 U007 U008 U009 U010 U011 U012 U014 U015
U016 U017 U018 U019 U020 U021 U022 U023 U024 U025 U026 U027 U028 U029 U030
U031 U032 U033 U034 U035 U036 U037 U038 U039 U041 U042 U043 U044 U045 U046
U047 U048 U049 U050 U051 U052 U053 U055 U056 U057 U058 U059 U060 U061 U062
U063 U064 U066 U067 U068 U069 U070 U071 U072 U073 U074 U075 U076 U077 U078
U079 U080 U081 U082 U083 U084 U085 U086 U087 U088 U089 U090 U091 U092 U093
U094 U095 U096 U097 U098 U099 U101 U102 U103 U105 U106 U107 U108 U109 U110
U111 U112 U113 U114 U115 U116 U117 U118 U119 U120 U121 U122 U123 U124 U125
U126 U127 U128 U129 U130 U131 U132 U133 U134 U135 U136 U137 U138 U139 U140
U141 U142 U143 U144 U145 U146 U147 U148 U149 U150 U151 U152 U153 U154 U155
U156 U157 U158 U159 U160 U161 U162 U163 U164 U165 U166 U167 U168 U169 U170
U171 U172 U173 U174 U176 U177 U178 U179 U180 U181 U182 U183 U184 U185 U186
U187 U188 U189 U190 U191 U192 U193 U194 U196 U197 U200 U201 U202 U203 U204
U205 U206 U207 U208 U209 U210 U211 U213 U214 U215 U216 U217 U218 U219 U220
U221 U222 U223 U225 U226 U227 U228 U234 U235 U236 U237 U238 U239 U240 U243
U244 U246 U247 U248 U249 U271 U277 U278 U279 U280 U328 U353 U359 U364 U365
U366 U367 U372 U373 U375 U376 U377 U378 U379 U381 U382 U383 U384 U385 U386
U387 U389 U390 U391 U392 U393 U394 U395 U396 U400 U401 U402 U403 U404 U407
U408 U409 U410 U411

ATTACHMENT E

Prohibitions - The permittee is prohibited from injecting wastes with either D001 (ignitable) or D003 (reactive) waste codes. In addition, no injectate containing PCB's at a concentration greater than or equal to 50 ppm shall be injected.

List of Presently Approved "Sources"

Presently approved "sources" of waste for disposal into the Well #2-12 injection well are identified below by identification number, name, location, and sampling frequency and analytical parameters. Future "sources", as approved by the Director, will be added to this Part III(E) of the permit.

NON-HAZARDOUS WASTE FLUIDS[1]

"Source" ID Number	"Source" Name	Location (Address)	Waste Analysis Parameters	Waste Sampling Frequency
			Toxicity Characteristic list (see 40 C.F.R. §261.24)	Quarterly
			Fingerprint[2]	Monthly

[1] Non-hazardous waste fluid sampling parameters and frequencies shall be determined on a case specific basis, with some sources tested at a lesser frequency such as annually. In addition, a single source may require different analytical parameters to be tested at different frequencies. Minimum fingerprinting analytical parameters are specified in Part III, Attachment A(G) of this permit.

[2] Minimum fingerprinting analytical parameters are specified in Part III, Attachment A(G) of this permit.

HAZARDOUS WASTE FLUIDS[3]

"Source" ID Number	"Source" Name	Location (Address)	Waste Analysis Parameters	Waste Sampling Frequency
1 - CL1(W)	EDS storm water	Environmental Disposal Systems, Inc. 28470 Citrin Road Romulus, MI 48174	Toxicity Characteristic list (see 40 C.F.R. §261.24)	Quarterly
1 - CL1(W)	EDS storm water	Environmental Disposal Systems, Inc. 28470 Citrin Road Romulus, MI 48174	Fingerprint[4]	Per Load

[3] Hazardous waste fluid sampling parameters and frequencies shall be determined on a case specific basis, with some sources tested at a lesser frequency such as annually. In addition, a single source may require different analytical parameters to be tested at different frequencies. Minimum fingerprinting analytical parameters are specified in Part III, Attachment A(G) of this permit.

[4] Minimum fingerprinting analytical parameters are specified in Part III Attachment A(G) of this permit.

OILFIELD BRINES[5]

"Source" ID Number	Oilfield Name	Location (T-R-S)	Geologic Formation	Waste Sampling Frequency

[5] All Oilfield brine wastes shall be analyzed for the parameters specified in Part III Attachment (A)(G) of this permit initially, and thereafter on an annual basis.